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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,156	06/19/2003	Hemant Chaskar	882.0004.U1(US)	5814
29683	7590	08/24/2004	EXAMINER	
HARRINGTON & SMITH, LLP 4 RESEARCH DRIVE SHELTON, CT 06484-6212			DUONG, FRANK	
			ART UNIT	PAPER NUMBER
			2666	

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/600,156	Applicant(s) CHASKAR ET AL.	
	Examiner Frank Duong	Art Unit 2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/19/03&3/10/04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is a response to the communication dated 06/19/2003. Claims 1-41 are pending in the application.

Information Disclosure Statement

2. The information disclosure statements filed 06/19/03 and 03/10/04 complies with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609. It has been considered and placed in the application file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-41 are rejected under 35 U.S.C. 102(b) as being anticipated by Malki et al (Low Latency Handoff in Mobile IPv4, Internet Draft, pages 1-65, May 2001) (hereinafter "Malki").

Regarding claim 1, in accordance with Malki reference entirety, Malki explicitly and inherently discloses a method to perform a low latency inter-technology handoff of a mobile node (MN) from a wireless local area network (WLAN) to a cellular network (page 9, first paragraph, lines 3-4), comprising:

transmitting a Bearer Context message from the MN for use by the cellular

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network, the Bearer Context message comprising information for use in establishing at least one access bearer with the cellular network for an ongoing packet data session of the MN (page 14, Figure 1; messages 1a and 1b and the description pertaining Router Advertisement described thereat or page 20 and the description pertaining "identifier"); and

responding to the receipt of the Bearer Context message with a Router Advertisement message that is forwarded towards the MN (page 14, Figure 1; messages 2a and 2b).

Regarding claim 2, in addition to features recited in base claim 1 (see rationales discussed above), Malki further discloses where the Bearer Context message is piggybacked on another message (page 23, first paragraph).

Regarding claim 3, in addition to features recited in base claim 1 (see rationales discussed above), Malki further discloses where the Bearer Context message comprises information expressive of a QOS requirement of an ongoing application or applications of the MN (page 63, second paragraph).

Regarding claim 4, in addition to features recited in base claim 1 (see rationales discussed above), Malki further discloses where the Bearer Context message comprises information expressive of a unique identity of the MN that is recognizable by the cellular network (page 20 and the description pertaining "identifier").

Regarding claim 5, in addition to features recited in base claim 1 (see rationales discussed above), Malki further discloses, where the Bearer Context message comprises information expressive of parameters to facilitate the creation of a Point-to-

point Protocol state in the cellular network (page 20 and the description pertaining "identifier").

Regarding claim 6, in addition to features recited in base claim 1 (see rationales discussed above), Malki further discloses where the Bearer Context message comprises information expressive of parameters to enable establishment of packet filters in the cellular network (page 20 and the description pertaining "identifier").

Regarding claim 7, in addition to features recited in base claim 1 (see rationales discussed above), Malki further discloses, where the Bearer Context message is piggybacked on a Router Solicitation message that is sent from an access router (AR) in response to receiving a Proxy Solicitation Request message from the MN (page 23, first paragraph).

Regarding claim 8, in addition to features recited in base claim 7 (see rationales discussed above), Malki further discloses where the Router Advertisement is sent to the AR, which in response sends a Proxy Router Advertisement to the MN (page 23, first paragraph).

Regarding claim 9, in addition to features recited in base claim 8 (see rationales discussed above), Malki further discloses where the Router Advertisement comprises a challenge for authentication and authorization purposes (page 27, section 3.9).

Regarding claim 10, in addition to features recited in base claim 8 (see rationales discussed above), Malki further discloses where the MN responds to the Proxy Router Advertisement by sending a Registration Request message to the cellular network (page 18, Figure 4; "HA Reg." message from MN to nFA).

Regarding claim 11, in addition to features recited in base claim 10 (see rationales discussed above), Malki further discloses where the Proxy Router Advertisement comprises a challenge for authentication and authorization purposes, and where the Registration Request message comprises information for identifying a home Authentication, Authorization, Accounting (AAA) function of the MN in the cellular network, and a response to the challenge received in the Proxy Router Advertisement (page 27, section 3.9).

Regarding claim 12, in addition to features recited in base claim 11 (see rationales discussed above), Malki further discloses where, in response to receiving the Registration Request message, a query is sent to the home AAA of the MN (pages 51-52, section 9.1).

Regarding claim 13, in addition to features recited in base claim 12 (see rationales discussed above), Malki further discloses where the query is sent via a visited AAA either directly or via at least one intermediate broker A.hA (pages 51-52, section 9.1).

Regarding claim 14, in addition to features recited in base claim 12 (see rationales discussed above), Malki further discloses where the query sent to the home AAA comprises information that indicates the challenge sent to the MN, and the response to the challenge received from the MN, for use by the home AAA in authenticating the MN (pages 51-52, section 9.1).

Regarding claim 15, in addition to features recited in base claim 14 (see rationales discussed above), Malki further discloses where the query sent to the home

AAA comprises information that indicates the access service requested by the MN (pages 51-52, section 9.1).

Regarding claim 16, in addition to features recited in base claim 14 (see rationales discussed above), Malki further discloses in response to successfully authenticating the MN, sending a success indication from the home AAA for authorizing access by the MN (pages 51-52, section 9.1).

Regarding claim 17, in addition to features recited in base claim 16 (see rationales discussed above), Malki further discloses where the success indication further comprises a ticket sent in clear text and in a form encrypted using a shared secret between the home AAA and the MN (pages 51-52, section 9.1).

Regarding claim 18, in addition to features recited in base claim 17 (see rationales discussed above), Malki further discloses where the clear text form of the ticket is stored in a cellular network node and where the encrypted ticket is sent to the MN via the AR (pages 51-52, section 9.1).

Regarding claim 19, in addition to features recited in base claim 18 (see rationales discussed above), Malki further inherently discloses sending an acknowledgement (ACK) from the MN to the cellular network, the ACK comprising the clear text ticket (pages 51-52, section 9.1).

Regarding claim 20, in addition to features recited in base claim 19 (see rationales discussed above), Malki further discloses in response to receiving the clear text ticket from the MN, further comprising performing access bearer setup in the cellular network for establishing at least one access bearer for the MN (page 20,

second paragraph).

Regarding claim 21, in addition to features recited in base claim 20 (see rationales discussed above), Malki further discloses further in response to receiving the clear text ticket from the MN, registering the MN with the HA and, upon receiving a Registration Reply from the HA, forwarding the Registration Reply from the cellular network to the MN upon an established address bearer (page 20, Figure 4; "Reg Reply" message).

Regarding claim 22, in addition to features recited in base claim 17 (see rationales discussed above), Malki further discloses generating a session key at the home AAA as clear text and in an encrypted form, using the shared secret between the MN and the home AAA, storing the clear text session key in a cellular network node, and forwarding the encrypted form of the session key to the MN for use by the MN in at least one of authenticating and encrypting future message transactions with the cellular network (pages 51-52, section 9.1).

Regarding claim 23, in addition to features recited in base claim 1 (see rationales discussed above), Malki further discloses where the Bearer Context is sent by the MN in an encrypted form using a shared secret between the MN and a home Authentication, Authorization, Accounting (AAA) function of the MN in the cellular network (pages 51-52, section 9.1).

Regarding claim 24, in addition to features recited in base claim 1 (see rationales discussed above), Malki further inherently discloses where communication between the MN and the cellular network comprises a HVHACK (Handover

initiate/Handover ACK) message exchange, and where the Bearer Context message is piggybacked on the HI message (page 23, section 3.4.3).

Regarding claim 25, in addition to features recited in base claim 24 (see rationales discussed above), Malki further discloses where the cellular network responds to a receipt of the Bearer Context message with a Mobile Node-Foreign Agent (MN-FA) challenge extension that is piggybacked on the HACK message (page 23, section 3.4.3).

Regarding claim 26, in addition to features recited in base claim 1 (see rationales discussed above), Malki further discloses where the MN transmits the Bearer Context message in response to a change in at least one of WLAN-related signal strength, signal quality and other information, such as geographical coverage information (page 45; "LLA").

Regarding claim 27, in accordance with Malki reference entirety, Malki discloses a data communications system (Figure 1) comprising a mobile node (MN), a wireless local area network (WLAN) (oFA or nFA) and a cellular network (oFA or nFA) (page 9, first paragraph), further comprising:

a transmitter for transmitting a Bearer Context message from the MN to the cellular network, the Bearer Context message comprising information for use in establishing access bearers in the cellular network for an ongoing packet data session of the MN (page 14, Figure 1; messages 1a and 1b and the description pertaining Router Advertisement described thereat or page 20 and the description pertaining "identifier"); and

responding to the receipt of the Bearer Context message with a Router Advertisement message that is forwarded towards the MN (page 14, Figure 1; messages 2a and 2b).

Regarding claim 28, in addition to features recited in base claim 27 (see rationales discussed above), Malki further discloses where the Bearer Context message is piggybacked on another message (page 23, first paragraph).

Regarding claim 29, in addition to features recited in base claim 28 (see rationales discussed above), Malki further discloses where the Bearer Context message is piggybacked on a Router Solicitation message that is sent from an access router (AR) in response to receiving a Proxy Solicitation Request message from the MN (page 23, first paragraph).

Regarding claim 30, in addition to features recited in base claim 28 (see rationales discussed above), Malki further discloses where communication between the MN and the cellular network comprises a HFHACK (Handover initiate/Handover ACK) message exchange, where the Bearer Context message is piggybacked on a HI message, and where the cellular network responds to a receipt of the Bearer Context message with a Mobile Node-Foreign Agent (MN-FA) challenge extension that is piggybacked on a HACK message (page 23, section 3.4.3).

Regarding claim 31, in addition to features recited in base claim 27 (see rationales discussed above), Malki further discloses where the Bearer Context message comprises information expressive of at least one of a QOS requirement of at least one ongoing application of the MN, a unique identity of the MN that is

recognizable by the cellular network, parameters to facilitate the creation of a Point-to-point Protocol state in the cellular network, and parameters to enable establishment of packet filters in the cellular network (page 23, section 3.4.3).

Regarding claim 32, in addition to features recited in base claim 27 (see rationales discussed above), Malki further discloses where the Bearer Context message is received by a Packet Data Support Node (PDSN) (page 14, Figure 1; oFA).

Regarding claim 33, in accordance with Malki reference entirety, Malki discloses a computer program for controlling operation of a mobile node (MN) that is operable with either a wireless local area network (WLAN) or a cellular network, said computer program being responsive to a change in at least one of received WLAN signal strength and signal quality for transmitting a Bearer Context message from the MN to the cellular network, the Bearer Context message comprising information for use in establishing at least one access bearer in the cellular network for an ongoing packet data session of the MN (pages 14-16 and Figure 1).

Regarding claim 34, in addition to features recited in base claim 33 (see rationales discussed above), Malki further discloses where the Bearer Context message is piggybacked on another message (page 23, first paragraph).

Regarding claim 35, in addition to features recited in base claim 34 (see rationales discussed above), Malki further discloses where the Bearer Context message is piggybacked on a Router Solicitation message that is sent from an access router (AR) in response to receiving a Proxy Solicitation Request message from the

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MN (page 23, first paragraph).

Regarding claim 36, in addition to features recited in base claim 34 (see rationales discussed above), Malki further discloses where communication between the MN and the cellular network comprises a HVHACK (Handover Initiate handover ACK) message exchange, where the Bearer Context message is piggybacked on a HI message, and where the cellular network responds to a receipt of the Bearer Context message with a Mobile Node-Foreign Agent (MN- FA) challenge extension that is piggybacked on a HACK message (page 23, first paragraph).

Regarding claim 37, in addition to features recited in base claim 34 (see rationales discussed above), Malki further discloses where the Bearer Context message comprises information expressive of at least one of a QOS requirement of at least one ongoing application of the MN, a unique identity of the MN that is recognizable by the cellular network, parameters to facilitate the creation of a Point-to-point Protocol state in the cellular network, and parameters to enable establishment of packet filters in the cellular network (page 23, first paragraph and page 63, last paragraph).

Regarding claim 38, in accordance with Malki reference entirety, Malki discloses a computer program for controlling operation of a network node of a cellular network, said computer program being responsive to a receipt of a Bearer Context message from a mobile node (MN) that is currently wirelessly coupled to a wireless local area network (WLAN) for initiating the establishment of a cellular network access bearer for the MN, the Bearer Context message comprising information for use in

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establishing the at least one access bearer in the cellular network for an ongoing packet data session of the MN (pages 14-16 and Figure 1).

Regarding claim 39, in addition to features recited in base claim 38 (see rationales discussed above), Malki further discloses where the cellular network node comprises a packet data support node (PDSN) (page 14, Figure 14; oFA).

Regarding claim 40, in addition to features recited in base claim 39 (see rationales discussed above), Malki further discloses where the cellular network comprises a cdma2000 cellular network (page 9, first paragraph).

Regarding claim 41, in addition to features recited in base claim 38 (see rationales discussed above), Malki further discloses where said cellular network node responds to the receipt of the Context Bearer message by sending a Router Advertisement message that comprises a Mobile Node-Foreign Agent challenge extension message towards the MN (page 23, first paragraph).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Leung (USP 6,760,444).

Purnadi et al (USP 6,708,031).

Perkins et al (Mobile IP Joins Forces with AAA, IEEE, pages 59-61, August 2000).

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Srikaya et al (Packet Mode in Wireless Network : Overview of Transition to Third Generation, IEEE, pages 164-172, September 2000).

3GPP2P.S0001 (Wireless IP Network Standard, 3GPP2 Project, pages 1-52, 1999.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Duong whose telephone number is (703) 308-5428. The examiner can normally be reached on 7:00AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (703) 308-5463. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Frank Duong
Examiner
Art Unit 2666

August 18, 2004